**Original Article**

# Players of male football teams' resilience: comparative analysis of content parameters

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**Abstract:**
**The purpose** of the article is an empirical study and comparison of the content parameters of the resilience of male football teams that won (Group 1; n=66), lost Group 2; n=66), and drew (Group 3; n=44). **Research methods:** valid psychodiagnostic methods using standard survey forms were used in the study, as well as Spearman correlation analysis (rs) and the Student's t-test. **Results.** It has been substantiated that the resilience of male football players is an integrated set of qualities, protective mechanisms, psychophysiological processes, and psycho-emotional states targeted at dealing with adversity, struggling, and overcoming/ not overcoming stress with a new level of functioning. It was found that the Resilience parameters of players who drew (Group 3) and players who won (Group 1) varied significantly RS (t=2.3; p<.05). It is explained that a team that receives a draw from the pre-game setup might develop such an expected model of events, which is followed by the mobilization of internal psycho-emotional efforts to the highest potential degree of player resilience. The resilience factors of Group 1 over Group 2 were revealed to be Cheerfulness (t=2.1; p<.05) and Motivation to Succeed (t=3.2; p<.01). It is established (p<.01; p<.05) and proven that an active life position, optimism, love for life, and emotional stability are powerful motivators for winning football players. **Conclusions.** The first hypothesis was rejected since the significant differences in resilience between Group 3 and Group 1 were t=2.3; p<.05, indicating that the players who played a draw outweighed the winners in terms of Resilience. The second hypothesis was confirmed since Group 3 respondents consistently outweighed Group 2 respondents in Resilience and Motivation to Succeed (p<.05). It is recommended to include the acquired results into the coaching staff's work on football players' tactical and psychological preparation for the game.
**Key words: resilience, protective mechanisms, foreplay, mental state, mental health**

**Introduction**

Resilience in sports has recently gained popularity and is becoming a popular brand. Athletes' capacity to retain resilience in the face of peak psycho-emotional loads, a large amount of training, the burden of which borders on human capacities, keeping a winning level, and ideal athletic condition, will be a crucial competitive advantage in the future. It should also be mentioned that resilience in sports is gaining universal acceptance and is applicable to coaching, physiology, medicine, and psychology (Marks, 2020; Staude & Radzyshevska, 2021). Resilience is a complex, diverse, and dynamic set of psychological resources carried by the athlete. The phenomena of resilience are studied in the scientific sports literature on three levels: as a quality or ability, as a process, and as an adaptation mechanism of the athlete's personality (Hrishyn, 2021). When we discuss resiliency as an ability, we concentrate on resilience. Resilience is an athlete's ability to maintain a relatively stable level of mental, psychological, and physical functioning after being affected by a potentially devastating event, such as the death of a loved one, a war in a country, natural disaster, accident, or trauma that may cause them to stop playing sports, as well as the ability to constantly look for the positive in life and learn permanently (Bonanno, 2004). The ability of an individual to survive damage and adapt to unpleasant and traumatic circumstances is referred to as resilience (Walker et al., 2017). Training camps, sports contests, and tournament battles demand extraordinarily strong nerves and a high degree of stress resistance from participants (not just athletes, but also coaches, medical personnel, and sports psychologists). These people are known as resilient. Individuals who are resilient have three characteristics: a steady acceptance of reality; a deep, strong values belief that life has worth; and the ability to improvise and invent (Coutu, 2002).

L. Lapp and L. Davidson (2020) investigated methods to promote resilience as an essential skill in sports. The function of mental processes and behavior in safeguarding the individual from stress and excessive stress is emphasized. Despite the social stereotype that resilient athletes are born, it is claimed that resilience is a set of skills that an athlete can acquire, shape, train, and practice. Resilience is defined as the combination of thinking

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and coping skills that operationalize successful behavior in the face of adversity such as injury and regressive sports performance. It has been demonstrated that the development of resilience affects athletes' self-esteem, motivation, and determination. Everyday challenges, when viewed through the lens of resilience skills, have the potential to improve athletic performance (Lapp & Davidson, 2020; Marks, 2020).

Y. Ueno and T. Suzuki (2016) discovered a connection between resilience and burnout in Japanese athletes in longitudinal research. Researchers discovered that resilience is adversely related to athlete fatigue and that resilience contributes to successful athletic adaptation (Ueno & Suzuki, 2016). Another research on resilience aimed to establish a relationship between personality qualities and day-to-day resilience. Athletes are said to exhibit diverse traits that are associated with resilience based on everyday interactions and sports competitive situations (Ueno & Oshio, 2017). A. Aronen, M. Kokkonen, and T. Hintsa (2021) investigated the association between sports coaches' emotional intelligence and resilience. Regression study has revealed that emotional intelligence is related to coach resilience regardless of age or gender. It is recommended to take into account emotional intelligence and emotional skills in the development of activities aimed at improving the professional skills and training of sports coaches (Aronen et al., 2021). The role of a coach in elite athletes' resilience has been researched. The importance of the quality of the coach-athlete interaction is highlighted. The individual approach's involvement in resilience creation is shown (Kegelaers & Wylleman, 2019). G. Lazos (2018) highlights the dynamic procedural component of resilience and proposes the process's trinity: 1) confrontation with adversity or risk factors; 2) activation of protective factors and their interplay with vulnerabilities; 3) formation of resilience or departure from the pathological mental response.

It is scientifically interesting to use karate as a way to counteract bullying by strengthening participants' resilience. Psychosocial formative impacts have been shown to boost the resilience and self-efficacy of young karatekas (Greco et al., 20219). Thus, sports are an efficient preventative intervention as well as a method of improving resiliency and resilience. This articulation stated issues and focuses on the substantial formative and developmental resilience resources of the younger generation in physical education.

It has been discovered that resilience, as a protective mechanism, consolidates personality attributes such as self-esteem, social support features, adaptive resources, and coping mechanisms (Mummery et al., 2004). M. Sarkher and D. Fletcher (2014) highlight the importance of psychological resilience as a protective factor. Athletes must improve a number of mental skills in order to endure the enormous strain placed on them. There are two types of factors: stress factors and protective factors. The study, which included Olympic winners, discovered five types of psychological defenses: optimism, motivation, confidence, focus, and social support (Sarkar & Fletcher, 2014). Vitality, in particular, as a perception of challenges, inclusion, and control S. Maddi (1994) finds situational reconstruction of the perception of the consequences of stress to be effective.

The study's authors have a variety of empirically confirmed scientific patterns in the plane of resilience factors. Dominant states of semantic regulation (Popovych & Blynova, 2019b; Popovych et al., 2019c; 2022a; 2022d), the connection between respondents' achievement and societal expectations (Popovych & Blynova, 2019a; Popovych et al., 2019a), viability (Popovych et al., 2021a), emotional stability (Popovych et al., 2022b), adaptation resource (Blynova et al., 2019; 2022), respondents' psychological well-being (Popovych et al., 2021g; 2022c) were investigated.

We define the resilience of players of the male football teams as an integrated set of qualities, defensive mechanisms, psychophysiological processes, and psycho-emotional states targeted at interaction with adverse events, struggle, and overcoming/not overcoming stress with a new level of functioning.

**Hypotheses.** 1. The key resilience metrics of male football team-winners have a considerable advantage over data obtained in those who were beaten or drew; 2. The primary resilience criteria of players on football teams that draw have a substantial advantage over those that lose.

**Purpose.** Empirically investigate and compare the content parameters of the resilience of male football teams that won, lost, and drew.

**Material and methods**

*Methodology.* The study of the resilience of players of male football teams was to break down the studied phenomenon into relevant psychological semantic parameters. And since football is a play sport in which tactical coherence, foreplay, and game discipline are important, we considered these characteristics when determining the resilience parameters. The start of a football match is always accompanied by excessive stress among the players, caution, and the exploration of weaknesses. Stress, fundamental events in the field, traumatic consequences, and resulting actions such as win/draw/loss were interpreted as effective means of situational reconstruction of stress and overcoming/avoiding/not overcoming stress in S. Maddi's concept of resilience (1994). As a result, four research parameters were identified: Viability, Perception of Challenges, Inclusion, and Control. This list is supplemented by factors representing the emotional component, which is partially decisive and can alter the course of events on the football field. These are the parameters of Emotional Stability and Cheerfulness that influence players' resilience. It was added to the main parameters – Motivation to Succeed – because the motivation to succeed is a resilience factor that inspires players to win. The implementation strategy of the research took into account the experience of testing similar technologies in the works (Hudimova, 2021;

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Hudimova et al., 2021; Kobets et al., 2021a; 2021b), the methodology of anticipatory processes of athletes as a state of mental fitness (Plokhikh, 2021; Popovych et al., 2020b; 2020c; 2021b), regularities of sports (Kozina, 2019; Marques, 2011; Popovych et al., 2021c; 2022e; Strykalenko et al., 2021), tactical team building (Popovych et al., 2021f), process safety design (Blynova et al., 2020; Mamenko et al., 2022; Popovych et al., 2020a). The construction of an empirical picture and principles of organizing the study of extreme loads of elite athletes (Cheban et al., 2020) and the results obtained in studies on related areas related to stress (Nosov et al., 2020a; 2020b) and difficult conditions of human activity (Nosov et al., 2021a; 2021b; Zinchenko et al., 2020; 2021; 2022a; 2022b). The outlined list of resilience parameters accurately reflected the content of this formation in football team players.

*Participants.* The empirical study involved n = 176 football players from different regions of Ukraine. The players represented the following Ukrainian regions: Kherson, Sumy, Mykolaiv, and Ivano-Frankivsk. Respondents ranged in age from 15 to 37 years. There were only male players. The average age was recorded at M = 26.9.

Organization of research. The study's statement strategy was implemented from September to November 2021. The study's organizers chose the basic games of football teams that were important for tournaments, such as derbies and cup matches. Only those participants who arrived at the sports field in the first minute had their empirical data collected. The data of players who came on as substitutes were not considered. This decision is explained by the fact that the player's planned replacement, forced replacement, or injury are all stressful situations that require effective situational reconstruction to overcome. All matches' data was collected, including wins, losses, and draws. The administrations of the teams granted permission to conduct a statement in advance. When filling out the methodological forms, the confidentiality of the received data, voluntariness, and awareness ensured sincerity and responsibility.

*Procedures and instruments.* Six statements comprise the "Brief Resilience Scale" (BRS) psychodiagnostic method (Smith et al., 2008): 1) "I quickly recover from difficulties"; 2) "It is very difficult for me to experience stress and adversity"; 3) "I quickly regain strength after difficulties"; 4) "I easily lose my balance if something unpleasant happens unexpectedly"; 5) "I usually overcome difficulties without unnecessary experiences"; 6) "It takes me a long time to get back in shape after a serious failure". The "Brief Resilience Scale" was used to assess players' ability to "push away" from stress, i.e. return to a stable condition. The methodology's creators, B. Smith et al. (2008), believe that this interpretation is the closest to the initial value of resilience. This scale assesses resilience by determining how rapidly a respondent can adapt to stress, withstand stress, sickness, and even flourish under adversity. The method employs a five-point scale ranging from 1 – never to 5 – almost always, with direct and reverse point assignment. Since the method only has one scale, the α- Cronbach reliability index was αBRS=.934.

The "Hardiness Survey" (HS) questionnaire (Maddi, 1994) was used to assess the psychological content aspects of football players' resilience. The questionnaire was modified by D. Leontiev and E. Rasskazova (2006). The questionnaire has three output scales: "Commitment" (CM), "Control" (CN), "Challenge" (ChL), and "Hardiness" (HR). The "Hardiness Survey" included 45 statements as well as direct and indirect questions. A four-point inverted scale was utilized, with 3 indicating no and 0 indicating yes. We define "Commitment" (CM) as the respondent's active life perspective, the notion that one may find worthwhile and fascinating things in life via engagement. Under the parameter "Control" (CN), we mean the belief that only by fighting and conquering obstacles can you affect the course of events on the football field and win. "Challenge" (ChL) represents respondents' readiness to take chances and their conviction that any mistakes may be learned. The drive to learn from everything is at the heart of resilience and reflects the generalized scale "Hardiness" (HR). The reliability index has been set at α- Cronbach αHS=.879.

Emotional Stability (C) and Cheerfulness (F) scales from the 16 PF Cattell test (2014) were used. These scales capture the phenomenon's semantic and emotional components. α- Cronbach was not calculated independently for each scale.

The "Motivation to Succeed" (MS) method (Elers, 2002) combines forty questions and has one direct Motivation to Succeed (MS) scale. α-Cronbach was recorded at the level of αMS=.854. To conclude, the homogeneity is α-Cronbach from the intermediate (.854) to the high (.934) levels using all methods. This proves the reliability of the empirical data obtained.

*Statistical analysis.* The software application "SPSS" v. 23.0 was used for mathematical data processing. The data are provided in descriptive frequency characteristics for the sake of reliability, Spearman's correlation coefficient (rs) is used, statistical difference is evaluated by Student's t-test, and differences in values are significant at the p≤.05 and p≤.01 levels.

**Results**

The results of the statement strategy of research of parameters of the resilience of male football players are presented in the form of descriptive frequency characteristics. The arithmetic mean (M) and standard deviation (SD) were the two fundamental features employed (SD). Table 1 presents the parameters of the used methods: "BRS" (Smith et al., 2008), "HS" (Maddi, 1994), 16 PF Cattell test (2014), and "MS" (Elers, 2002).

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**Table 1.** Empirical data of descriptive frequency characteristics of semantic parameters (n=176)

| Scale | Mean Arithmetic (M) | Standard Deviation (SD) |
|---|---|---|
| Resilience (RS) | 3.42 | ±.53 |
| Commitment (CM) | 35.34 | ±8.23 |
| Control (CN) | 28.06 | ±6.06 |
| Challenge (ChL) | 13.02 | ±3.43 |
| Hardiness (HR) | 76.54 | ±15.79 |
| Emotional Stability (C) | 5.64 | ±.67 |
| Cheerfulness (F) | 6.14 | ±.72 |
| Motivation to Succeed (MS) | 25.12 | ±6.11 |

We state that the data "RS" (M=3.42; SD=±.53) on the scale of the same name "BRS" did not deviate significantly from the norms established by the method's authors (Smith et al., 2008). The HS questionnaire also revealed that the arithmetic mean (M) and standard deviation (SD) of our respondents on the scales "CM" (M=35.34; SD=±8.23), "CN" (M=28.06; SD=±6.06), "ChL" (M=13.02; SD=±3.43) and "HR" (M=78.54; SD=±15.79), were within the norm proposed by the questionnaire's author (Maddi, 1994), and there were no statistically significant differences between the statistics of parachutist sports, yoga practices, and other athletes (Popovych et al., 2021a). The data of descriptive frequency features on the scales Emotional Stability, Cheerfulness, and Motivation to Succeed did not show any significant differences, as proposed by the authors and acquired in empirical research on sports or topics relevant to our study (Popovych et al., 2021d).

Table 2 explains the variations in the Student's t-test parameters. These elements had an impact on the resilience of players, either directly or indirectly. To determine the differences, all respondents were separated into three groups: Group 1 consisted of players from winning teams, Group 2 of players from losing teams, and Group 3 of players from teams that drew.

**Table 2.** Significant statistical difference in resilience parameters by groups of subjects

| Scale | Criterion | Group 1 & Group 2 | Group 3 & Group 1 | Group 3 & Group 2 |
|---|---|---|---|---|
| Resilience (RS) | tSt | 1.2; p>.05 | 2.3; p<.05 | 2.7; p<.05 |
| Commitment (CM) | tSt | 1.2; p>.05 | .9; p>.05 | 1.3; p>.05 |
| Control (CN) | tSt | 1.3; p>.05 | 1.0; p>.05 | 1.4; p>.05 |
| Challenge (ChL) | tSt | 1.1; p>.05 | 1.1; p>.05 | 1.0; p>.05 |
| Hardiness (HR) | tSt | 1.2; p>.05 | .8; p>.05 | 1.1; p>.05 |
| Emotional Stability (C) | tSt | 1.1; p>.05 | .9; p>.05 | 1.0; p>.05 |
| Cheerfulness (F) | tSt | 2.1; p<.05 | .8; p>.05 | 1.3; p>.05 |
| Motivation to Succeed (MS) | tSt | 3.2; p<.01 | .9; p>.05 | 2.1; p<.05 |

Note: tSt – Student's t-test; Group 1 – football players from winning teams; Group 2 – football players from losing teams; Group 3 – football players from teams that drew.

The diagram depicts the variations in resilience parameters among the examined groups (Fig. I).
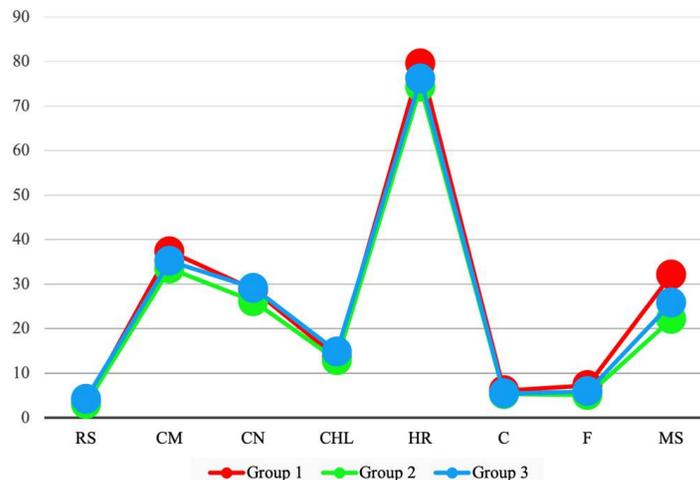


Note: Group 1 – football players from winning teams; Group 2 – football players from losing teams; Group 3 – football players from teams that drew.

**Figure I.** Diagram of differences in resilience parameters of Group 1, Group 2, and Group 3

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The proposed groups' differences were compared. A comparison of Groups 1 and 2 was provided. Group 1 dominated all parameters without exception, however only F (t=2.1; p<.05) and MS (t=3.2; p<.01) showed significant differences. We explain this by pointing out that, despite the winning players' overall advantage, the winning result was clearly given by much greater degrees of Cheerfulness and Motivation to Succeed. In comparison to Groups 3 and 1, that was the players who won the draw with the players who won. Unexpectedly, Group 3 showed greater Resilience and a significant difference in RS (t=2.3; p<.05). We explain this by stating that a team that received a draw was able to develop such an expected model of events, beginning with the pre-game preparation (Popovych, 2015; 2017), which was accompanied by mobilization of internal psycho-emotional efforts to the highest potential degree of player resilience. Personal and dispositional resilience should be differentiated on the football field. Our explanation is a substantiation of the empirical evidence acquired, and it necessitates more observation and scientific inquiry. In comparison with Groups 3 and 1, the winners outperformed in a variety of measures, including Commitment, Hardiness, Emotional Stability, Cheerfulness, and Motivation to Succeed. The advantage of Group 3 was only recorded in the parameters Control and Challenge. All of the benefits already mentioned were unreliable. The advantage of Control and Challenge in Group 3 can be explained by their strong responsiveness and the forced confrontation of the teams that played a draw. Compared to Group 3 and Group 2, the players who drew with the players who lost. The data from Group 3 respondents had an advantage for all criteria. There were significant variations in the parameters: RS (t=2.7; p<.05) and MS (t=2.1; p<.05). The differences are explained by the fact that, in contrast to those who were beaten, resilience paired with the desire for success helped players to fight and cling to the result.

Correlations (RS) with the key resilience characteristics were clarified in order to analyze the semantic elements of the defined phenomena. Table 3 demonstrates a linear correlation of all connections.

**Table 3.** Linear correlation of resilience connections with the studied parameters (n=176)

| Parameters | Resilience (RS) |
|---|---|
| Commitment (CM) | .148* |
| Control (CN) | 086* |
| Challenge (ChL) | .076 |
| Hardiness (HR) | .115* |
| Emotional Stability (C) | .146* |
| Cheerfulness (F) | .186* |
| Motivation to Succeed (MS) | .202** |

Note: * – p<.05; ** – p<.01.

Figure II clearly shows Spearman (rs) statistically significant correlations in the form of a correlation galaxy.



Note: ——— positive correlations at p≤.05; —— positive correlations at p≤.01.
**Figure II.** Correlation galaxy of resilience with the studied parameters

According to the findings, all of the investigated connections between the parameters were positive. The most significant correlation was between RE and MS (.202; p≤.01). We explain this by the fact that football players' drive for success directed them to maintain a reasonably consistent level of mental, psychological, and physical functioning while operationalizing tactical duties for the game and executing pre-game preparation.

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This combination prepared athletes for physical exertion provided mental stability in the transfer of defeats and helped in the recovery of injuries. There were also five significant correlations with reliability ($p \leq .05$): CM ($r_s=.148$), CN ($r_s=.086$), HR ($r_s=.115$), C ($r_s=.146$) and F ($r_s=.186$). These correlations demonstrated that the parameters chosen were closely associated with resilience. We concentrated on the items with the highest levels of linear connection from this list, which were cheerfulness, commitment, and emotional stability. A winning athlete's active life position, optimism, love of life, and emotional stability were powerful motivators. There was no reliable correlation between RE and the ChL scale, thus the challenge only worked when one needs to save the game. This is supported by the fact that Group 3 had the highest average score on this scale (M=14.84; SD=±3.92), i.e. players who played a draw.

**Discussions**

There have been no research on the resilience of male football players, nor have there been any studies comparing the resilience parameters of various experimental groups. A substantial number of research that establish the elements of the phenomena of resilience and examined the parameters of athlete resilience (Haminich, 2016; Lazos, 2018) are investigated. In particular, G. Lazos (2018) outlines the psychological factors of personality resilience, which include: intellectual potential, social support, optimism, self-efficacy, self-control, self-regulation of emotions, high and adequate self-esteem, resilience, positive mood, faith, hope, the meaning of life, efficiency in relations with colleagues. We were able to examine the list and conclude that self-efficacy is strongly associated with the success motive. Let us recall (see Table 3) that the present study between resilience and motivation to succeed has the strongest linear relationship (.202; $p \leq .01$), confirming previous research findings. Continuing the theme of resilience and positive mood, we measured the Hardiness (HR) scale (Maddi, 1994) and the Cheerfulness (F) of the 16 PF Cattell test (2014). These two scales (see Table 3) likewise reported reliable levels of positive linear correlation ($p \leq .01$). The Commitment Scale (CM) (Maddi, 1994) and social support, optimism, and efficiency in working with colleagues have a lot in common. This indicates that, as a result of an optimistic mindset, interaction and support may be found in life to be meaningful and engaging. Thus, in our study, the elements identified by previous researchers were expressed in the form of parameters, which were measured and justified. The comparison of resilience characteristics between the examined groups deserves consideration. Analyzing the identical parameters of the winning players (Group 1), we conclude that the data we collected are supported by experimental investigations of football players' mental states of expectancy of victory (Popovych et al., 2019b). The mental state of F1 "Value-semantic self-regulation of triumph" was shown to be the most successful in this research. Those football teams won because their players were instructed in every match and saw the significance of their life in it. Note that the meaning of life was also highlighted as a factor of resilience in the work of G. Lazos (2018), which confirms the legitimacy of our results. According to another study (Popovych et al., 2021e), F2 "Distant Self-Regulation" was the most critical mental state of defeated team members. When difficulties arise, such players withdraw. Most significantly, there was a negative linear association between this state and the Self-Control Scale. In the current study, we confirmed that "Control" (CN) (.086; $p \leq .05$) was associated with resilience. Players gained confidence and conviction by directing the course of events on the football field. Only through battle they could overcome obstacles and win.

Based on the results given (see Tab. 2 and Fig. I), we conclude that the first hypothesis is invalid since the significant variations in resilience between Groups 3 and 1 were t=2.3; p<.05. The second hypothesis was validated since Group 3 respondents outweigh Group 2 respondents in every parameter, with two RS and MS having significant differences (p<.05). Of course, the discovered scientific fact is interesting in sports psychology and high success, but it needs to be validated in other samples.

**Conclusions**

1. The resilience of male football players is an integrated set of qualities, protective mechanisms, psychophysiological processes, and psycho-emotional states targeted at dealing with adversity, struggling, and overcoming/not overcoming stress with a higher degree of functioning.

2. In a comparison of the resilience characteristics of players who won a draw (Group 3) with players who won (Group 1), Group 3 had a higher Resilience rate and a significant difference in RS (t=2.3; p<.05). It has been substantiated that a team that receives a draw from the pre-game setup is capable of constructing such an expected model of events, which is accompanied by the mobilization of internal psycho-emotional efforts to the highest potential level of player resilience.

3. When the resilience factors of the players who won (Group 1) were compared to those who lost (Group 2), the resilience parameters of Group 1 were found to be more dominant, with significant differences in Cheerfulness (t=2.1; p<.05) and Motivation to Succeed (t=3.2; p<.01). The winning result is provided by the high levels of these parameters, which are formed by the players of Group 1.

4. Correlation analysis established and validated (p<.01; p<.05) that an active life position, optimism, love of life, and emotional stability are effective motivators for successful football players.

5. The first hypothesis was rejected since the significant differences in resilience between Group 3 & Group 1 were t=2.3; p<.05, indicating that the winners of the Resilience parameter did not outperform those who played a

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draw. The second hypothesis was confirmed since Group 3 respondents outperformed Group 2, with significant differences in Resilience and Motivation to Succeed (p<.05). It is recommended to include the acquired results into the coaching staff's work on the tactical and psychological preparation of football players for the game. We observe perspective in the study of team sports athletes' mental states of resilience.

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